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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/754,402	01/09/2004	Dennis Michael Volpano	026009-000112US	7973

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EXAMINER	
BROOKS, SHANNON	
ART UNIT	**PAPER NUMBER**
2617	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/754,402	VOLPANO, DENNIS MICHAEL	
	Examiner	Art Unit	
	Shannon R. Brooks	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *43-47* is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☒ Claim(s) *22-42 and 48-49* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. **Claims 1-3, 6-7, 9-13, and 16-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitchin (US 7130904 B2) in view of Ho (US 7151762 B1).

Consider **Claim 1**, Kitchin teaches a security apparatus for a wireless LAN, comprising: a plurality of end stations; and a Public Access Point (PAP) **(read as appears as multiple physical access points, Col. 6, lines 1-67)** for providing a plurality of soft Basic Service Sets (BSS) from within a single physical access point (AP) **(Col. 6, lines 1-15)**; wherein any number of said end stations can belong to a soft BSS **(read as each BSS has a distinct MAC address, Col. 6, lines 20-23)**; wherein said PAP appears to said end stations as multiple physical access points, one AP for each soft BSS **(Col. 6, lines 16-20)**.

Kitchin discloses soft service sets, logically virtual, however does not specifically disclose virtual. Ho discloses virtual **(See abstract, Col. 4, line 6-15 and Col. 5, lines 4-17), where Ho discusses virtual streams defining service sets).**

Therefore, it would have been obvious to one of ordinary skill in the art to modify Kitchin and have virtual sets as taught by Ho, thereby enhancing the quality of service of the network, as discussed by Ho **(Col. 2, lines 27-37)**.

Consider **Claim 6**, Kitchin teaches a security apparatus for a wireless LAN, comprising: a plurality of 802.11 end stations **(Col. 6, lines 1-15)**; a Public Access Point (PAP) **(read as appears as multiple physical access points, Col. 6, lines 1-67)**, said PAP comprising a personal **(read as encrypted, Col. 6, lines 23-47)** virtual bridged LAN (PVLAN) **(read as discovery of the LAN by stations can be controlled and distinguished, Col. 4, lines 4-25)** instantiated into a soft 802.11 Basic Service Set (BSS) from within a single physical access point (AP) **(Col. 6, lines 1-7)**.

Kitchin discloses soft service sets, logically virtual, however does not specifically disclose virtual. Ho discloses virtual **(See abstract, Col. 4, line 6-15 and Col. 5, lines 4-17), where Ho discusses virtual streams defining service sets).**

Therefore, it would have been obvious to one of ordinary skill in the art to modify Kitchin and have virtual sets as taught by Ho, thereby enhancing the quality of service of the network, as discussed by Ho **(Col. 2, lines 27-37)**.

Consider **Claim 7**, Kitchin teaches a secure wireless network, comprising: a soft 802.11 Basic Service Set (BSS) **(Col. 6, lines 16-20)**; a plurality of stations, each of said stations having a hardware (MAC) address **(Col. 6, lines 20-23)**; all said stations in

said soft BSS sharing a group security association **(Col. 6, lines 23-26)**; and one of said stations in said soft BSS comprising a public access point (PAP) **(read as appears as multiple physical access points, Col. 6, lines 1-67)**.

Kitchin discloses soft service sets, logically virtual, however does not specifically disclose virtual. Ho discloses virtual **(See abstract, Col. 4, line 6-15 and Col. 5, lines 4-17), where Ho discusses virtual streams defining service sets).**

Therefore, it would have been obvious to one of ordinary skill in the art to modify Kitchin and have virtual sets as taught by Ho, thereby enhancing the quality of service of the network, as discussed by Ho **(Col. 2, lines 27-37)**.

Consider **Claim 2**, Kitchin teaches the apparatus, said PAP provisioning a plurality of separate LAN segments **(read as distinct physical media, Col. 4, lines 4-6)** while providing separate link privacy and integrity for each of said LAN segments **(Col. 6, lines 16-26).**

Consider **Claim 3**, Kitchin teaches the apparatus of claim 1, wherein all of said end stations, and any local file servers and other devices associated with said LAN **(client, subscriber, or class nodes, Col. 3, lines 5-35)**, are associated with a virtual access point; and wherein all virtual access points arise from a same physical PAP **(read as appears as multiple physical access points, Col. 6, lines 1-67)**.

Consider **Claim 9,** Kitchin teaches the network, wherein exactly one of said stations in said soft BSS is a public access point for bridging an 802.11 Wireless Medium (WM) and an 802.11 Distribution System Medium (DSM) **(read as wired, Col. 4, lines 4-15)**.

Consider **Claim 10**, Kitchin teaches the network, said group security association

further comprising: a unique unicast security association for every station in said soft BSS **(Col. 6, lines 16-55)**; wherein said security association is shared between each station and said PAP of said softl BSS **(Col. 6, lines 16-55)**.

Consider **Claim 11**, Kitchin teaches the network, further comprising: a plurality of soft BSSs, wherein each softl BSS has its own identifier, (BSSID) **(Col. 4, line 64-67 and Col. 5, lines 1-9).**

Consider **Claim 12**, Kitchin teaches the network, said BSSID comprising: a virtual MAC address for said soft BSS **(Col. 5, lines 45-67)**.

Consider **Claim 13**, Kitchin teaches the network, wherein said PAP receives a frame from an 802.11 Wireless Medium (WM) destined for one of its virtual MAC addresses **(Col. 5, lines 11-67)**; and wherein said PAP transmits a frame to said WM using one of its virtual MAC addresses as a source MAC address of said frame **(Col. 5, lines 11-67)**.

Consider **Claim 16**, Kitchin teaches the network, wherein a PAP can belong to more than one soft BSS **(Col. 6, lines 1-15)**.

Consider **Claim 17**, Kitchin teaches the network, wherein any station that is not a PAP **(read as is not equipped to appear as multiple logical access points so inherently can belong to at most one)** can belong to at most one soft BSS **(Col. 6, lines 16-20).**

Consider **Claim 18**, Kitchin teaches the network, further comprising: a virtual bridged LAN (VLAN) for bridging a softl BSS with another soft BSS by connection of each softl BSS's PAP (**Figs. 2 and 3 and Col. 4, lines 53-67 and Col. 5, lines 1-10)**.

2. **Claims 4-5, and 19-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitchin (US 7130904 B2) in view of Ho (US 7151762 B1) and further in view of Meier (US 6847620 B1).

Consider **Claim 4**, Kitchin teaches the apparatus, further comprising: a plurality of PAPs **(read as a plurality of access points, Col. 4, lines 53-67)**, except that it does not specifically teach and a location-update protocol (read as protocol data units, PDUs) for updating forwarding tables of bridges that connect said PAPs together.

However, Meier teaches a location-update protocol (read as protocol data units, PDUs) for updating forwarding tables of bridges that connect said PAPs together **(Col. 4, lines 44-57).**

Therefore it would have been obvious to one skilled in the art at the time of the invention to incorporate the teachings of Meier into Kitchin to aid in the building of a spanning tree **(Col. 4, lines 53-57)**.

Consider **Claim 5**, Kitchin teaches the apparatus, further comprising, except that it does not specifically teach a fine bridging method **(utilizing an 802.1Q bridge procedure)** for limiting communications between all said end stations that belong to a soft BSS.

However Meier teaches a fine bridging method **(utilizing an 802.1Q procedure)** for limiting communications between all said end stations that belong to a soft BSS **(Col. 4, lines 23-43)**.

Therefore it would have been obvious to one skilled in the art at the time of the invention to incorporate the teachings of Meier into Kitchin to aid in assignment of unique identifiers **(Col. 4, lines 23-27)**.

Consider **Claim 19**, Kitchen teaches the network, wherein except that it does not teach wherein the PAP of each soft BSS connects to a Distribution System (DS) via a trunked or untagged port of a VLAN-aware bridge.

However, Meier teaches wherein the PAP of each soft BSS connects to a Distribution System (DS) via a trunked or untagged port of a VLAN-aware bridge **(Col. 3, lines 6-50 and Fig. 1, line 102).**

Therefore it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Meier into Kitchin to aid in logically isolating broadcast domains **(Col. 3, line 10).**

Consider **Claim 20**, Kitchin teaches the network, wherein except that it does not teach wherein frames transmitted to said DS carry VLAN tags known to a Distribution System Medium (DSM).

However, Meier teaches wherein frames transmitted to said DS carry VLAN tags known to a Distribution System Medium (DSM) **(Col. 3, lines 6-67 and Col. 4, lines 1-5).**

Therefore it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Meier into Kitchin to aid in logically isolating broadcast domains **(Col. 3, line 10).**

Consider **Claim 21**, Kitchin teaches the network, except that it does not teach the network wherein said PAP maintains a DSM VLAN mapping **(a method for isolating)** that maps a VLAN tag to a soft BSS identifier (BSSID) **(Col. 3, lines 6-21)**.

3. **Claims 14, and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitchin (US 7130904 B2) in view of Ho (US 7151762 B1) and further in view of Cervello (US 2002/0071448 A1).

Consider **Claim 14**, Kitchin teaches the network, further comprising: a plurality of soft BSSs supported by a shared TSF (Timing Synchronization Function)(Col.6, lines 48-67), except that it does not specifically teach DCF (Distributed Coordination Function), and, optionally, a PCF (Point Coordination Function), at a single PAP.

However, Cervello teaches DCF (Distributed Coordination Function), and, optionally, a PCF (Point Coordination Function), at a single PAP **(Fig. 3 and Pg. 2, [0017])**.

Therefore it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Cervello into Kitchin to aid in efficient accessing of the wireless medium (Pg. 2, [0016].

Consider **Claim 15**, Kitchin teaches the network , each PAP further comprising, except that it does not specifically teach the network , each PAP further comprising a single NAV (Network Allocation Vector) and PC (Point Coordinator).

However, Cervello teaches the network, each PAP further comprising a single NAV (Network Allocation Vector) **(Pg. 2, [0017])** and PC (Point Coordinator) **(Pg. 2, [0017]).**

Therefore it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Cervello into Kitchin to aid in efficient accessing of the wireless medium **(Pg. 2, [0016].**

4. **`Claim 8 is** rejected under 35 U.S.C. 103(a) as being unpatentable over Kitchin (US 7130904 B2) in view of Ho (US 7151762 B1) and further in view of Beach (US 2003/0112820 A1).

Consider **Claim 8**, Kitchin teaches the network, said group security association of each station comprising: an encryption key (Col. 6, line 37), except that it does not specifically teach and an authentication code key.

However, Beach teaches an authentication code key (**read as authentication protocols, Pg. 11, [0150]).**

Therefore it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Beach into Kitchin to increase security efficiency **(Pg. 11,**

[0150]).

Allowable Subject Matter

5. **Claims 43-47** are allowed.

6. **Claims 22-25 and 26-42 and 48-49** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

Commissioner for Patents
P.O. Box 1450
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Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shannon Brooks whose telephone number is (571) 270-1115. The examiner can normally be reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro can be reached on (571) 272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shannon R. Brooks

January 19, 2007

Nick Corsaro

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